

ABSTRACT

A heating heat exchanger in a coolant circuit for motor vehicles is provided whereby the air to be heated can be additionally heated by a refrigerant circuit, operable as heat pump or short circuit, for additional heating. A gas cooler/condenser for the additional heating operation and a functionally separated evaporator for the cooling plant operation of the refrigerant circuit are provided, whereby the heat exchanger surfaces of the gas cooler/condenser for the additional heating operation are integrated into the heating heat exchanger and in additional heating operation are integrated into the heating heat exchanger and in additional heating operation the air to be heated is simultaneously heated by the heating heat exchanger and the gas cooler/condenser.